

The structure of elementary particles.

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Elementary particles are structureless by definition and have a point structure. If elementary particles consisted of other particles, or had linear dimensions, then according to Einstein's STR (speed of light), such particles could be destroyed in a certain way. That is, such "elementary particles" would no longer be elementary.

Considering that, according to Einstein's general relativity, matter and space-time are inseparable (if matter exists, then space-time also exists, and vice versa), we can assume that elementary particles are literally folded extra dimensions of space/time.

That is, we will slightly change string theory in which the "extra" spatial dimensions are collapsed. And let's also take into account that time and space are equivalent.

If elementary particles are collapsed dimensions of space/time, then we connect space, time and elementary particles into a single whole. This is important, since in the usual sense, space/time is the arena in which the interaction of elementary particles occurs.

Space cannot consist of a material environment, but elementary particles really exist, therefore, energy (and therefore mass) is a certain curvature of the folded dimensions of space/time. Because each elementary particle has a certain energy.

From here it is easy to understand the existence of antiparticles (curvature in the opposite direction), as well as wave-particle dualism - elementary particles consist of folded dimensions that can oscillate, which means that a particle, by definition, cannot have a spatial position. That is, due to the oscillation of folded dimensions, a wave of matter is formed (according to de Broglie). The periodic process that Louis de Broglie considered is the transition of space/time dimensions into an elementary particle, and vice versa.

The use of collapsed dimensions implies that there may be multiple universes having different dimensions of space/time. In lower dimensional universes, extra dimensions of space/time collapse to form various elementary particles. In different universes there will be elementary particles different in essence and properties. But, probably, a stable Universe is formed only in 4-dimensional space-time (like selection in Darwinian evolution).

At the end, I will give a description of the folding of space during the Apocalypse (New Testament, Revelation of John the Theologian, Chapter 6, verse 14):

"And the sky disappeared, curled up like a scroll...".